

6(7)

PHASE I BOOK EXPLOITATION SOV/2626

Voznesenskiy, Boris Nikolayevich, Yavgeniy Andreyevich Zaynchkovskiy,  
Zoya Il'inichna Prytkova, and Shaya Grigor'yevich Solov'yev

Apparatura poluavtomaticheskoy mezhdugorodnoy telefonnoy svyazi;  
s prilozheniyem al'boma skhem (Equipment for Semiautomatic  
Intercity Telephone Communication; With Album of Circuits)  
Moscow, Svyaz'izdat, 1958. 71 p. Errata slip inserted. 8,800  
copies printed.

Al'bom skhem (Album of Circuit Diagrams). 1958. 23 p.  
Errata slip inserted. 8,800 copies printed.

Resp. Ed.: P.T. Gobets; Ed.: V.Ye. Petrova; Tech. Ed.:  
K.G. Markoch.

PURPOSE: The book is intended for people engaged in the production  
and operation of equipment for semiautomatic intercity telephone  
systems.

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Equipment (Cont.)

SOV/2626

the intercity network. Recently, single-frequency simplified equipment for semiautomatic communications was developed for oblast' networks and is now being introduced. This equipment provides for the organization of semiautomatic communication from the rayon center to the oblast center, with manual communication on the same channel in the reverse direction. The same equipment may be used for d-c or a-c transmission of dialing pulses, using the ME-8 equipment for transmission of frequency signals of the control channel, the SMT-34 equipment for transmission of the carrier frequency, etc. The following persons contributed to the development of the system and its equipment: S.A. Vasil'yev, M.M. Vitsnuzel', B.N. Voznesenskiy, I.Ye. Golubtsov, M.B. Granat, S.B. Levina, Z.I. Prytkova, Sh.G. Solov'yev, G.N. Stepanov, and V.Ye. Sumarokov. There are no references.

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Foreword

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LANDER, Valeriya L'vovna; ROGINSKIY, Vadim Nikolayevich;  
SOLOV'YEV, Shaya Grigor'yevich; IL'INA, L.D., otv. red.  
KOMAROVA, Ye.V., red.

[Engineering methods for constructing relay systems] In-  
zhenernye metody postroeniia releinykh skhem. Moskva, Izd-  
vo "Sviaz'" 1964. 39 p. (MIRA 17:5)

SOLOV'YEV, S.I., inzh.

Experience in operating a.c. locomotives. [Trudy] LIIZHT  
no.193:36-40 '62. (MIRA 15:12)

1. Krasnoyarskoye otdeleniye Vostochno-Sibirskoy dorogi.  
(Electric locomotives)

SOLOV'EV, G. M.; PUSTOVITANKO, A. M.

Possible decrease of the period of a longitudinal wave  
with greater depth of the seismic center. Izv. AN SSSR.  
Ser. geofiz. no.6:839-846 Je '64. (MIRA 17:7)

.. Anzhalinskii kompleksnyy nauchno-issledovatel'skiy institut.

SOLOV'YEV, S. I.  
S. I.

✓ Composition and properties of the hydrochloric acid solution of niobium pentoxide. S. I. SOLOV'YEV, B. I. KIVLOV, CH and V. P. DOSTYAREV. *J. Gen. Chem. U.S.S.R.* 23, 613-18 (1965) (Engl. translation).—See C.A. 49, 12109a. H. I. H. (2) 7m9T.

SOLOV'YEV, S.I.

USSR 1

Composition and properties of the hydrochloric acid solution of niobium pentoxide. S. I. Solov'yev, E. I. Kivlov, and V. P. Deryazev. Zhur. Obshchei Khim. 25, 839-43 (1955).  $\text{Nb}_2\text{O}_5$  was fused with  $\text{K}_2\text{SO}_4$  and the cold melt powdered and leached with concd.  $\text{H}_2\text{SO}_4$ . Addn. of  $\text{NH}_3$  to the resulting soln. pptd. niobic acid; this was washed with hot  $\text{H}_2\text{O}$  until free of  $\text{SO}_4$ . Heating to boiling a mixt. of 20 g. of freshly pptd. acid with 50 ml. concd.  $\text{HCl}$  gave a suspension, which was filtered while hot through a no. 4 glass filter. The residue was promptly dissolved in 150-200 ml.  $\text{H}_2\text{O}$ , forming a clear soln. (I), which after several days became opalescent, but without formation of a ppt. Nb in I was detd. by pptn. of niobic acid either by addn. of  $\text{NH}_3$  or by diluting 2 ml. I to 50 ml. with  $\text{H}_2\text{O}$ , and boiling several min.  $\text{HCl}$  in I was detd. acidimetrically and corroborated by titration with  $\text{AgNO}_3$ . The wt. ratio Nb:Cl varied from 1:3.53 to 1:4.12 depending on the conditions of formation of I. I was titrated conductometrically with  $\text{NaOH}$ ,  $\text{KNaF}_4$ , and  $\text{K}_2\text{C}_2\text{O}_4$ . With each reagent there was obtained a min. in cond. corresponding to the total  $\text{HCl}$  present in I. In each case there was an inflection in the cond. curve before the min. was reached. The inflections indicated that part of the  $\text{HCl}$  was "free", while part was "bonded" to the niobic acid. The mol. ratio of the "bonded"  $\text{HCl}$ :Nb was constantly 3:1, while the relative amt. of "free"  $\text{HCl}$  varied. Thus the species in soln. is a hydrated niobium oxychloride. Donald B. Müller.

Ural Polytech. Inst.

SOLOV'YEV, S.I.

12971 (Russian) Binding Co. summary of Accompanying  
 Titanium by Means of Cationites. *Uchastie vobila of titana*  
 pri pomoshchi kationitov. S. I. Solov'ev, E. I. Kislov, and  
 L. P. Komarova. *Zhurnal Neorganicheskoi Khimii*, v. 1, no. 4,  
 1976, p. 1047-1048.

Method of separation is based on the ability of freshly pre-  
 cipitated columbic acid, after treatment with concentrated  
 hydrochloric acid, to become a colloidal solution that is not  
 absorbed by the cationites, whereas the Ti and other impurities  
 are eliminated by means of ion-exchange adsorption.

Ural Polytech Inst.



SOLOV'YEV, S.I., Cond Chem Sci — (disc) "Study in the field of separation  
of niobium and titanium on cationites from hydrochloride solutions."  
Sverdlovsk, 1974. 16 pp (Min of Higher Education USSR. Ural Polytech Inst  
in S.Ye.Kirov), 180 copies (IL, 46-58, 137)

AUTHORS: Solov'ev, S. I., Krylov, Ye. I.

SOV/78-3-11-11/23

TITLE: On the Nature of the Hydrochloric Acid Solutions of Penta-valent Niobium (O prirode solyanokislykh rastvorov pyativalentnogo niobiya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 11, pp 2487 - 2490 (USSR)

ABSTRACT: The behaviour of niobium hydroxide in hydrochloric acid solutions was investigated by means of the dialysis and the determination of the electric conductivity and the viscosity. A colloidal solution of niobium hydroxide with 99,8%  $Nb_2O_5$  + 0,2%  $TiO_2$  was used as initial material. The results of the dialysis and the electric conductivity showed that the stability of niobium does not depend on the duration of the dialysis, but on the presence of the electrolyte in the solution. Ultramicroscopic investigations showed that the Brown movement occurs in the solution after the dialysis. In the dialysis process the niobium oxychloride is slowly transformed in niobic

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On the Nature of the Hydrochloric Acid Solutions of  
Pentavalent Niobium

SOV/78-3-11-11/23

acid gel. The niobic acid gel is not reversible and has tyxotropic properties. If the gel is stored for several months it ages. The electric charge of the niobic acid sol was determined as well as the corresponding electrokinetic potential. A slow transformation of  $\text{NbOCl}_3$  takes place over the mycelium of niobium oxy-chloride to the mycelium of the niotic acid during the dialysis process. The niobic acid has a positive charge. There are 3 tables and 9 references, 5 of which are Soviet.

ASSOCIATION: Ural'skiy politekhnicheskiy institut im.S.M.Kirova  
(Ural Polytechnical Institute imeni S.M.Kirov)

SUBMITTED: September 5, 1957

Card 2/2

SALAY, P.I., kand.veterinarnykh nauk; SHITOV, K.A., dotsent; SOLOV'YEV, S.I.

Abortions in swine caused by leptospirosis. Veterinariia 3/  
no.8:39-40 Ag '60. (MIA 16:7)

1. Voronezhskaya nauchno-issledovatel'skaya veterinarnaya stantsiya.  
(Voronezh Province--Leptospirosis) (Abortion in animals)  
(Swine--Diseases and pests)

SOLOV'YEV, S.I.

Conference-seminar of veterinary specialists. Veterinariia 38  
no.1:95 Ja '61. (MIRA 15:4)  
(Voronezh Province - Veterinary medicine - Congresses)

KOROTKIKH, A.V.; SOLOV'YEV, S.I.; GRIDNIKOV, V.D.

Malignant foot-and-mouth disease in cattle. Veterinariia 38  
no.8:23-24 Ag '61 (MIRA 18:1)

1. Voronezhskaya oblastnaya nauchno-issledovatel'skaya veterinarnaya stantsiya (for Korotkikh, Solov'yev). 2. Glavnyy veterinarnyy vrach Yevdakovskogo rayona Voronezhskoy oblasti (for Gridnikov).

MAKAROV, M.A., prof.; SOLOV'YEV, S.I.

Agar-tissue preparation for the stimulation of animal fattening.  
Zhivotnovodstvo 24 no.9:35-36 S '62. (MIRA 15:12)

1. Vorneshakiy sel'skokhozyaystvennyy institut. (for Makarov).
2. Direktor Voronezhskoy oblastnoy veterinarnoy laboratorii (for Solov'yev).  
(Agar) (Stock and stockbreeding) (Tissue extracts)

SOLOV'YEV, S. I., GRIDNIKOV, V. D. and KOMOTIKH, A. V. (NIVS and  
Chief Veterinary Surgeon Lydakovsk raion, Voronezh Oblast')

Malignant foot-and-mouth disease of large cattle

Veterinariya, Vol. 38, No. 8, August 1961, pp. 23



GONCHAROV, P. I. (Head of the Veterinary Department of the Voronezh Oblast Agricultural Administration) and SOLOV'YEV, S. I. (Director of the Oblast Veterinary Bacteriological Laboratory)

"Veterinary specialists of the Voronezh Oblast in the struggle for the increase of products of the animal industry

Veterinariya, vol. 39, no. 4, April 1962 p. 20

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NAKHMANSO, V.M.; OSIDZE, D.F.; SEROV, M.F.; ALEKSANDROVA, V.T.;  
SOLOV'YEV, S.; MALYSHEV, N.; IVANENKO, N.M.; POTATURKIN, V.;  
CHIZHOV, A.I.; MIKHAYLOV, N.N.

In the Soviet Union. Veterinariia 39 no.1:88-96 Ja '63.  
(MIRA 16:6)  
(Veterinary medicine)

SOLOV'YEV, S.I.; KRASNOSHEKOVA, V.V.

Epizootiology of infectious atrophic rhinitis in swine. Veterinar-  
iia 40 no.2:31-33 F '63. (MIRA 17:2)

1. Voronezhskaya oblastnaya veterinarno-bakteriologicheskaya labo-  
ratoriya.

BARKOVSKIY, V.I.; SOLOV'YEV, S.I.; LESNYKH, V.I.

Ridding farms of hog cholera in Voronezh Province. Veterinariia  
40 no.11:50-51 N '63. (MIRA 17:9)

1. Voronezhskaya oblastnaya veterinarnaya laboratoriya.

USSR/Geophysics - Conference

FD-762

Card 1/1 : Pub 44-10/11

Author : Kirillov, F.

Title : Chronicles. Conference of young scientists of the Geophysics Institute, Academy of Scientists of the USSR

Periodical : Izv. AN SSSR, Ser. geofiz., 495-496, Sep-Oct 1954

Abstract : May 17-20, 1954, the Geophysics Institute held a conference at which junior scientific workers participated with 18 reports; e.g. Ye. A. Lyubimova (heating of the Earth), S. L. Solov'yev (intensity of earthquakes in Turkmenia 1912-1951), S. A. Fedotov (wave hodographs), Yu. I. Vasil'yev (use of amplitude data in seismic prospecting), O. G. Shamina (elastic impulses during collapse of rocks in earthquakes), O. I. Silayeva (velocity of propagation of elastic waves in granite, marble, etc.), V. I. Tatarskiy (propagation of waves in medium with random weak inhomogeneity of refraction coefficient), L. P. Zaytsev (reflection of waves from boundary), A. S. Chaplygina (measuring the thermobaric field in the atmosphere by statistical treatment of empiric data).

Institution : --

Submitted : --

USSR, Geophysics - Seismic energy

FD-2773

Card 1/ 3

Pub 45 - 7/13

Author

: Solov'yev, S. L.; Dzhibladze, E. A.

Title

: Notes. Variation of flux of seismic energy with epicentral distance

Periodical

: Izv. AN SSSR, Ser. geofiz., Sep-Oct 1955, 462-463

Abstract

: In an unbounded homogeneous space the flux of energy of elastic waves decreases in proportion to the square of the distance from the source:  $E \approx 1/r^2$  (in consequence of the increase of the surface of the wave front). In the half-space close to the surface the energy flux must decrease more rapidly, since with incidence of the waves upon the boundary there arise surface waves and energy of bulk waves in part passes over into energy of surface waves. As shown by H. Lamb ("propagation of tremors over surface of elastic solid," Phil. Trans. Roy. Soc., London, 203, 1904), in the case of a concentrated surface source the energy flux of the bulk waves propagated along the boundary decrease in proportion to the fourth power of the distance:  $E \approx 1/r^4$ .

FD-2773

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Abstract

: The authors obtained certain empirical data on the character of the decrease in energy flux of transverse wave at small epicentral distances ( $50 \text{ km} < D < 500 \text{ km}$ ) for the earthquakes of Caucasus (depth of center: 5 to 20 km). They found the dependence of  $E$  on  $r$  in the form:  $E = a/r^k$ ; then  $\log E \approx k \cdot \log r$ . The time average energy flux through a point of observation is  $E = 2\pi^2 \rho c A^2 / T^2$ , where  $\rho c$  is the acoustic rigidity of the rock at the place of observation, and  $A, T$  are amplitude and period of sinusoid a section of which can approximate the actual movement of the medium in the incident wave.

Using this formula the authors constructed the curves  $\log E = f(\log D)$  for the direct transverse wave  $S$ . Measurements unavoidably contain errors since in large part the record of the direct wave is superimposed with a record of diffracted and reflected waves, but these errors cannot essential influence the final results in view of the small relative intensity of the indirect waves. The mean angular coefficient of 15 individual curves obtained equals  $3.8 \pm 0.3$  (Figure 2. Individual curves and mean curve of variation



FD-2773

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Abstract

: of energy flux of wave  $S$  as a function of epicentral distance for earthquakes of Caucasus); consequently in the investigated range of distances one obtains  $E = a/r^{3.8 \pm 0.3}$ , which is close to Lamb's results for the half-space. Data on the variation of flux of seismic energy with distance was obtained by the authors also in a study of the limiting distance of earthquake recording. They remark that one can carry out a relative classification of earthquakes according to the magnitude of the energy without knowing the exact value of  $k$ . For this it is sufficient to compare the energy fluxes of various earthquakes (with identical depth of center) at one and the same epicentral distance; vide Figure 1 (Dependence of limiting distance of earthquake recording as a function of the magnitude of the earthquake energy, for earthquakes of Caucasus with  $D \approx 200$  km on the assumption  $k = 2$ . It is found that the slope of the curve  $\log E = f(\log D)$  gives for  $k$  a value of 3.3.

Institution : Geophysical Institute, Academy of Sciences USSR

Submitted : April 22, 1955

SOLOV'YEV, S.L.

Classification of earthquakes according to the magnitude of their  
energy. Trudy Geofiz. inst. no. 30:3-21 '55. (MIRA 9:6)  
(Earthquakes)

1. I.

Belovskiy, I. I.: "On the force classification of earthquakes in the USSR." Acad. of USSR. Geophysics Inst. Moscow, 1956. (Dissertation for the degree of Candidate in Physico-mathematical Science)

So: Enizhnaya letopis' No 17, 1956. Moscow. Pages 91-100; 111

SOLOV'YEV, S.L. Candidate of Physicomathematical Sciences

"Results of the work on power classification of earthquakes required for the compilation of maps of seismicity of the Soviet Union", a paper given at the 50th anniversary Session of the Seismic Station "Pulkovo", 25-29 Sep 1956, Leningrad.

SUM. I322

SOLOV'YEV, S.L.

Relation between earthquake energy and intensity. Izv. AN SSSR, Ser.  
geofiz. no.3:357-359 Mr '56. (MIRA 9:7)

1.Akademiya nauk SSSR, Geofizicheskiy institut.

BALAKINA, L. M.

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PHASE I BOOK EXPLOSTATION

007/1663

Abstrakty knigi 0000. Komitet po geologii i geofizike.

Veisley Schindler as XI General'nyy s'ezhdaniye Nauchnoissledovaniye geofizicheskoye i geofizicheskoye s'ezhdaniye. Nauchnoissledovaniye s'ezhdaniye s'ezhdaniye i fiziki nauchnykh (Abstracts of Reports Submitted to the XI General Assembly of the International Union of Geodesy and Geophysics. The International Association of Seismology and Physics of the Earth's Interior) Moscow, 1977. 108 p. /Parallel texts in Russian and English/ 1,500 copies printed.

So additional contributors mentioned

PURPOSE: This booklet is intended for geophysicists, especially those specializing in seismology.

COVERAGE: This collection of articles deals with the structure and composition of the Earth and phenomena related thereto. The majority of the articles concern studies of earthquakes and seismic waves. Other articles cover the structure of the Earth's crust and mountain roots; the elastic properties of rocks at high pressures; the piezoelectric effect of rocks and the method of modelling in seismogeophysics. The collection also contains articles on the Earth's thermal history, the microseismic method of tracing storms and others.

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Kondorova, S.V. Travel Time and Some Dynamic Characteristics of Seismic Waves	58
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2011/11/11, 11:11

AUTHOR: Savarenskiy, Ye. F.

49-4-23/23

TITLE: First seismological conference of the Czechoslovak Ac.Sc.  
(O pervoy seysmologicheskoy konferentsii Chekhoslovatskoy  
Akademii Nauk).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya,  
1957, No.4, pp.558-559 (USSR)

ABSTRACT: This conference was held between March 18 and 22, 1957  
in Liblice, the aim of which was to acquaint seismologists  
of various countries with results of studies of seismicity,  
determination of the intensity of earthquakes, study of  
the structure of the Earth's crust, investigation of the  
propagation of seismic waves and design of apparatus.  
In addition to Czech seismologists, there were three  
seismologists from Hungary, three from Eastern Germany,  
two from Poland, one from Roumania and five from the  
Soviet Union. The conference was also attended by the  
General Secretary of the International Association of  
Seismology and Physics of Mineral Resources, Prof. Rothe  
of France. A total of thirty papers were read. Soviet  
delegates read the following papers:

1. Yu. V. Riznichenko "Study of the structure of the  
Earth's crust in the U.S.S. by the method of deep seismic  
sounding";

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SOLOV'YEV, S.L.

Correlations between the energy of three-dimensional waves and the  
intensity of earthquakes. Biul. Sov. po seism. no.6:109-121 '57.  
(MIRA 11:1)

1. Institut fiziki Zemli AN SSSR, Moskva.  
(Seismometry)



AUTHORS: Solov'yev, S. L. and Shebalin, N. V.

49-7-6/14

TITLE: Determination of the intensity of earthquakes from the displacement of the soil in surface waves. (Opredeleniye intensivnosti zemletryaseniya po smeshcheniyu pochvy v poverkhnostnykh volnakh).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1957, No.7, pp. 926-930 (USSR)

ABSTRACT: In the atlas on the seismicity of the USSR (Ref. 1) and in the Bulletin of the Seismic Stations of the USSR for 1955 (Publ. Ac.Sc. USSR, Moscow, 1956), a classification is given of the earthquakes which is based on their intensity  $M$ . In conjunction with this classification methods were studied of determining  $M$  which are based on utilising surface waves. In this paper the results are dealt with relating to obtaining of formulae and tables which are suitable for practical calculation of the value  $M$ . In earlier work, one of the authors (Ref. 3) proposed to use for the intensity  $M$  the logarithm of the maximum speed of the horizontal movement of the soil in the surface waves and, accordingly, the following formula is applied for this purpose:

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$$M = 1.8 \lg \frac{A}{T} - 1.8 \left( \frac{A}{T} \right)^2 \quad (1)$$

*Solov'yev, S.L.*

49-58-3-19/19

AUTHOR: Solov'yev, S.L.

TITLE: Conference on the Problem of Tsunami and Seismicity in the Far East (Soveshchaniye po probleme tsunami i seysmichnosti dal'negu vostoka)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1958, Nr 3, pp.422-423 (USSR)

ABSTRACT: Many countries which border on the Pacific, including the USSR, suffer great damage from huge oceanic waves caused by seismic activity on the floor of the Pacific. These waves (generally called by the Japanese term "tsunami") reach a height of 20-30 m or more at the coast. On Nov.4, 1952, such a wave devastated the coasts of Kamchatka and the Kurile Islands. Several countries (e.g., Japan and the USA) have a special service for warning inhabitants of the approach of a tsunami and the USSR is preparing one at the moment. The first Conference on this problem was convened by the Seismology Council (Sovet po seysmologii) jointly with the Sakhalin Combined Research Institute, Academy of Sciences USSR (Sakhalinskiy kompleksnyy nauchno-issledovatel'skiy institut AN SSSR), and took place from October 1-5, 1957 and seventeen papers were read. The President of the Seismological Council, Professor Ye. F. Savarevskiy, gave a

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49-58-3-19/19

Conference on the Problem of Tsunami and Seismicity in the Far East.

general review of problems concerning tsunami and warning of their approach. Corresponding Member of the Academy of Sciences, USSR, L. N. Sretenskiy and Candidate of Phys.-Mat. Science Z. K. Grigorash (Marine Hydrophysics Institute Academy of Sciences USSR) talked on the division of tsunami regionally in the area of the Kuriles and derived theoretical values for the height of tsunami at various points on the coast due to sources in the epicentral zone of oceanic earthquakes. Candidates of Geographical Science A. S. Ionin and P. A. Kaplin (Oceanology Institute, Academy of Sciences USSR) considered the influence of coastal relief on the height of tsunami. The authors showed that this was very important - often more so than the distance to the coast from the epicentre. They gave heights of waves for various types of relief and applied this to the 1952 earthquake. An expedition to the region would be necessary for detailed study. Candidate of Phys.-Mat.Sc. D. P. Kirnos and A. V. Rykov (Institute of Physics of the Earth, Ac.Sc.USSR) discussed the organisation of a warning service and the setting up of stations for speedy detection of the earth-

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49-58-3-10/10

Conference on the Problem of Tsunami and Seismicity in the Far East.

quakes. These would consist of instruments for determining the azimuth of the epicentre, and of seismographs. K. B. Vakar (Acoustics Institute, Academy of Sciences USSR) spoke of the significance of hydroacoustic methods of determining the forerunners of tsunami, whilst B. L. Ochapovskiy (Candidate Phys-Mat.Sc., Sakhalin Combined Scientific Research Institute), V. V. Gribachevskiy (Director of the Sakhalin Meteorological Services), V. N. Lomanov (Khamchatka Director of the Hydro Meteorological Services) and Z. P. Arsent'yev made concrete proposals for building stations and creating a warning service. Four reports were devoted to the question of seismicity in the Far East. P. Z. Tarakanov (Sakhalin Combined Scientific Research Institute) gave information on the distribution of earthquake regions in this area, whilst M. D. Ferchev (Sakhalin Combined Scientific Research Institute) reported on velocity of propagation of tsunami and the form of their sources. Candidate of Phys.-Mat.Sciences V. N. Bichevina (Sakhalin Combined Scientific Research Institute) gave estimates of the thickness of the Earth's crust in the Far East - in the South Sakhalin it was 50-60 km decreasing to 30-40 km in the region of the Kurile Islands and becoming equal to 20-25 km in the central part of the Pacific.

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49-58-3-18/19

Conference on the Problem of Tsunami and Seismicity in the Far East.

Professor M. G. Organov (Far Eastern Branch Academy of Sciences USSR) gave the basic geological background of the question in this area. Two reports were given on the connection between seismic and volcanic activity. Candidate of Geological-Mineralogical Sciences G. S. Gorshkov (Volcanological laboratory, Academy of Sciences USSR) showed that there was a possibility of forecasting volcanic activity from seismic data. P. I. Tokarev (Volcanological station "Kiyuchi") compared tectonic with seismic and volcanic activity in the Kurile-Kamchatka area during the last 40 to 50 years.

He also stated that correlations of seismic and volcanic data are only found in the case of earthquakes which originate at depths of 80-300 km approximately along the western boundary of the arc. Candidate Phys.-Mat. Sciences Ye. I. Galperin (Institute of Physics of the Earth, Academy of Sciences USSR) gave some preliminary results obtained by the Geophysical Expedition sent out under the auspices of the I.S.Y. to study the structure of the earth's crust in the transitional region between the Asian continent and the Pacific Ocean. The reports read at the Conference will be published in a special number entitled "Communications of the

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49-58-3-19/19

Conference on the Problem of Tsunami and Seismicity in the Far East.

Sakhalin Scientific Research Institute". The Conference decided that the most important future work would be to set up a warning system and to design automatic detector stations. (Note: This is a condensed translation).

AVAILABLE: Library of Congress.

Card 5/5

49-58-4-10/18

AUTHOR: Solov'yev, S. L.

TITLE: North Baykal Earthquake of April 29, 1917 (Severobaykal'skoye zemletryaseniye 29 Aprelya 1917 g.)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1958, Nr 4, pp 536-542 (USSR)

ABSTRACT: The method of classification of earthquakes according to intensity, proposed by the author of this paper (Ref.1) which is at present being applied by the seismical services of the USSR (Ref.2) permits approximate evaluation of the intensity of earthquakes in the epicentre on the basis of the recordings by the stations of the amplitudes of seismic waves. In this paper such evaluation of the maximum force of the earthquake is applied to the so-far inadequately evaluated intensive earthquake in the Baykal region which occurred on April 29, 1917. The obtained results are of interest for making the scheme of seismic zoning of this territory more accurate. Acknowledgements are made to Yu. E. Veys, K. V. Pshennikov and A. D. Tskhakaya for selecting the material analysed in this paper. There are 3 figures, 7 tables and 24 references, of which 14 are Soviet, 9 are English and 1 Italian.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki zemli.

SOLOV'YEV, S.L.

Session of the Seismological Council of the Academy of Sciences  
of the U.S.S.R. on problems of seismological division into  
districts. Izv. AN SSSR, Ser. geofiz. no.8:1054-1056 no.8:  
1054-1056 Ag '58. (MIRA 11:9)  
(Seismology--Congresses)



SOV/ 49-58-11-5/18

AUTHOR: Solov'yev, S. L.

TITLE: Distance in Amplitude of Earth Tremors Caused by Surface  
Waves from Earthquakes in the Kuril-Kamchatka Region  
(Ob izmenenii s rasstoyaniyem amplitudy kolebaniya  
pochvy v poverkhnostnykh volnakh Kurilo-Kamchatskikh  
zemletryaseni)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya,  
1958, Nr 11, pp 1323-1334 (USSR)

ABSTRACT: It was observed in the most active seismic region of the USSR, Kuril-Kamchatka, that the relation of the displacement (A) and the velocity (A/T) of the surface vibrations to their intensity (M) during earthquakes was not the same as that in other regions. The relation of A (or A/T) to the distance from the epicentre could be expressed as Eq.(1). The coefficients a and b for this equation were found experimentally from fifty earthquakes in the Far East region between 1953 and 1954 by application of graphs, one of which is shown in Fig.1. The value of b was found to be equal to:

$$b_{cp} = 0.8 \pm 0.3, \quad 1^\circ < \Delta < 90^\circ. \quad (2)$$

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SOV/ 49-58-11-5/18

Distance in Amplitude of Earth Tremors Caused by Surface Waves from Earthquakes in the Kuril-Kamchatka Region

The variations of  $\delta(\lg A)$  were determined in relation to the distance from the epicentre as is shown in Fig.2. It can be seen from the graph that two curves were produced. The analysis shows that the first curve relates to the near stations of observation and the second to the farther, continental, stations. Also it was found that the coefficient  $b$  for the second curve differs from the general case and was calculated as:

$$b_{cp} = 1.3 \pm 0.7; \quad 30^\circ < \Delta < 90^\circ. \quad (3)$$

In order to establish the variations of amplitude with distance, the data was presented in the form of graphs illustrating the earthquakes in two different regions (Fig.3). It was found that the values of  $M$  for the Far East region were  $1/4$  to  $1/2$  times lower than those for the continental regions (Tables 1 and 2). Fig.4 shows the individual values of  $M$ , together with the mean value for various stations of observation. The relation  $A/T$  was calculated from the expression (4) where the

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SOV/ 49-58-11-5/18

Distance in Amplitude of Earth Tremors Caused by Surface Waves  
from Earthquakes in the Kuril-Kamchatka Region

coefficients  $a'$  and  $b'$  were found experimentally (Table 3).  
In the case of the continental earthquakes  $b'$  was  
calculated from expression (5). However, the value of  
 $A/T$  for the distant stations needs an additional  
investigation as it shows some variation with distance.  
There are 4 figures, 3 tables and 4 references, 3 of which  
are Soviet, 1 English.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli  
(Institute of Physics of the Earth, Ac. Sc. USSR)

SUBMITTED: May 21, 1957

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3(10)

SOV/30-59-6-28/40

AUTHOR:

Solov'yev, S. L.

TITLE:

The Development of the Seismic Service in the USSR  
(Razvitiye seysmicheskoy sluzhby SSSR)

PERIODICAL:

Vestnik Akademii nauk SSSR, 1959, Nr 6, pp 121-122 (USSR)

ABSTRACT:

70 seismic stations are located on the territory of the USSR, 30 of them belonging to the regional seismologic organizations and 40 to the Institut fiziki Zemli Akademii nauk SSSR (Institute of Terrestrial Physics of the Academy of Sciences, USSR). A meeting of the Sovet po seysmologii Akademii nauk SSSR (Council of Seismology of the Academy of Sciences, USSR) was held in Moscow from March 19 to March 21; on this occasion the draft of new regulations of a uniform seismic service in the USSR (YeSS) was discussed and accepted. According to these regulations the seismic stations will be under the supervision of scientific institutions of the USSR Academy of Sciences, the Academies of Sciences of Union Republics, of Ministries or departments based on territorial distribution. The Council of Seismology will be entrusted with the general supervision of the Service. D. P. Kirnos, I. P. Pasechnik and M. Ye. Fedoseyenko ✓

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The Development of the Seismic Service in the USSR

SOV/30-59-6-28/40

reported on the problem of an apparatus typical of seismic stations. At present the number of seismic stations in the individual districts of the country is not equal. For the time being there are no local stations in the Altay. 37 new stations are planned for the next seven years, 13 in the Baykal region, 8 in the Altay and 7 in the Yakutiya. ✓

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SOV/49-59-8-12/27

AUTHORS: Solov'yev, S. L. and Shebalin, N. V.

TITLE: Tsumanis and Intensity of Earthquakes in the Kuril-  
Kamchatka Region ✓

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya,  
1959, Nr 8, pp 1195-1198 (USSR)

ABSTRACT: Data of earthquakes tabulated on p 1195 were analysed.

The table gives the following:

Column 1 - intensity M,

" 2 - number of earthquakes,

" 3-6 - their number in tsumani zones (South Kuril,  
Middle Kuril, North, etc.)

" 7-10 - number of tsumani earthquakes. ✓

The relationship between the height of tsumanis and  
the intensity of earthquakes is given in Fig 1. An  
attempt to determine the formation of tsumanis is shown in  
the nomograph illustrated in Fig 2, where data from the  
Station Petropavlovsk were used (lower area signifies  
no tsumanis, the upper indicates possibilities of tsumanis).

A similar nomogram for the Station Kuril'sk is shown in  
Fig 3. These nomographs should be treated only as a

Card 1/2 general prediction of tsumanis.

SOV/49-59-9-11/25

AUTHORS: Solov'yev, S. I. and Shein, V. E

TITLE: The Intensity of Earthquakes Based on Data of Soviet Far Eastern and Continental Stations of USSR

PERIODICAL: Izvestiya Akademii nauk, SSSR, Seriya geofizicheskaya, 1959, Nr 9, pp 1375 to 1385 + 1 plate (USSR)

ABSTRACT: The intensity  $M$  was calculated from the formula  $M = \lg A - \lg A^*$  where the function  $\lg A^*$  characterises a mean rate of decrease of the ground displacement with distance which was empirically determined as

$$\lg A^* \approx -1.20 - 1.25 \lg \Delta^0, 1^0 < \Delta < 100^0$$

for the regions extending from the Caucasus to the Middle Asia ( $\Delta$  - epicentric distance). The results of calculations with  $\pm 0.25$  accuracy are tabulated in Tab 1, where the following data are included: Column 1 - date; 2 - time of earthquake; 3 and 4 - their co-ordinates; 5 - region; 6 -  $M_{\text{mean}}$ ; 7 - number of stations taking part in determination of  $M_{\text{mean}}$ ; 8 to 14 -  $\delta M$  stations; 15 - mean  $\delta M$ . The results of calculation of  $M_{\text{Far East}} - M_{\text{Continental}} = \lg A_{\text{F.E.}} / A_{\text{Cent.}}$  determined.

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The Intensity of Earthquakes Based on Data of  
Continental Stations of USSR

for some of the Far East stations are illustrated in Figs 1 to 4. This calculation was performed for the regions where the intensity  $M$  was obtained from more than 10 earthquakes (Tab 2). Fig 5 shows the distribution of the difference  $M_{F.E.} - M_{Cont.}$  showing a regular pattern. There are 5 figures, 2 tables and 12 references, 8 of which are Soviet, 2 French and 2 English.

ASSOCIATION: Akademiya nauk SSSR. Institut fiziki Zemli  
(AS USSR, Institute of Physics of Earth)

SUBMITTED: April 10, 1958

Card 2/2



AUTHOR: Solov'yev, S. L.

TITLE: News. Session of the Council of Seismology

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya  
1959, Nr 9, pp 1434-1435

ABSTRACT: The session was convened in Moscow on March 19 to 21, 1959, where the problem of centralisation of the Seismic Service of USSR was discussed. In the opening remarks Ye. F. Savarenskiy and Ye. A. Koridalin described the present state of the Service where the seismic units are attached to many Scientific Departments. In 1958 there were 70 Seismic Stations: 30 belonged to the regional scientific centres, 40 to the Institute of Physics of Earth, from which 32 were situated in the European part of the USSR. The new project suggests a regional division with a central station in each republic or region administered by the Central Council of Seismology. D. P. Kirnos dealt with the proposed administrative matters aiming at the modernisation of the service. The project was approved. Also, E. E. Potin and A. A. Treskov described the proposed changes in the Siberian Service where, during the present Seven-Year Plan, 37

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207/05 - 10-00-00

News. Session of the Council of Seismology

new Stations are to be opened (6 in Altai, 1 in Cis-Baikal and 7 in Yakutiya). V. N. Aver'yanov, S. A. Fedotov and M. D. Perchev gave details of the earthquake in South Kuril Islands (Iturup) on November 7, 1958, the epicentre of which was 90 km deep and the intensity  $M \sim 8$ . ✓

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SOV/49-59-10-19/19

AUTHOR: Solov'yev, S. L.

TITLE: Session on Seismology and Tectonics of the Pre-Baikal  
and the Adjacent Regions

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya  
1959. Nr 10, pp 1527-1528 (USSR)

ABSTRACT: The Session took place on the 9 to 17 June 1959. It  
was convened by the Council on Seismology, Ac. Sc.  
USSR; the East Siberian Geological Institute, Ac. Sc.  
USSR, the Irkutsk State University. It was opened  
by the Chairman of the East Siberian Seismic Department,  
Ac. Sc. USSR, Professor V. A. Krotov. The following  
scientists submitted their papers: A. A. Treskov  
(Seismic Station Irkutsk) - Seismicity of the Pre-Baikal,  
N. A. Florensov (East Siberian Geological Institute) -  
✓ Earthquakes Determined from Excavated Rocks, R. A.  
Petrushchevskiy (Institute of Physics of the Earth, Ac. Sc.  
USSR) - Geological Development in South Siberia,  
V. A. Aprozov (Moscow University) - Geomorphology and  
✓ Seismo-Tectonics of Mongolia, I. A. Rezanov (Institute  
of Physics of the Earth, Ac. Sc. USSR) - Neo-Tectonics  
of the Far East, V. N. Danilovich (Irkutsk Institute of

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SOV/49-59-10-19/19

Session on Seismology and Tectonics of the Pre-Baikal and the Adjacent Regions

Mining and Metallurgy) - Morphological Peculiarities of the Pre-Baikal, N. P. Ladokhin (East Siberian Geological Institute) - Tectonic Motions of the Bottom of Gulf Proval, V. P. Solonenko and N. A. Florensova (East Siberian Geological Institute) - Foci of Gobi-Altai Earthquakes, S. V. Puchkov and P. I. Khovanova (Institute of Physics of the Earth, Ac. Sc. USSR) - Results of the Pre-Baikal Seismic Expedition, S. L. Solov'yev (Council on Seismology, Ac. Sc. USSR) - Analysis of the Earthquake Chart of the Pre-Baikal, K. V. Pshennikov (Seismic Station Irkutsk) and A. V. Vvedenskaya (Institute of Physics of the Earth, Ac. Sc. USSR) - Motions in the Foci of Strong Baikal Earthquakes, L.M. Balakina (Institute of Physics of Earth, Ac. Sc. USSR) - Motions in the Foci of Gobi-Altai Earthquakes, A. P. Bulmasov (Irkutsk University) - Chart of Magnetic and Gravitational Anomalies of the Pre-Baikal, Ye. K. Grechishchev (East Siberian Geological Institute) - Costal Motions of the Lake Baikal, L. A. Misharina (Irkutsk University) A. A. Treskov and G. M. Medvedeva

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SOV/49-59-10-19/19

Session on Seismology and Tectonics of the Pre-Baikal and the Adjacent Regions

(Seismic Station, Irkutsk) - <sup>✓</sup>Seismo-tectonics of the Pre-Baikal, V. N. Gayskiy (Institute of Seismo-Rigidity of Constructions and Seismology, Ac. Sc. Tadzik SSR) - Earth's Crust, V. N. Bichevina (Sakhalin Scientific Institute, Sakhalin Branch of Ac. Sc. USSR) - Thickness of the Earth's Crust in the Far East, O. N. Solov'yeva, S. F. Savarenskiy and A. P. Lazareva (Institute of Physics of the Earth, Ac. Sc. USSR) - Mean Thickness of the Earth's Crust in the Arctic Sea, G. P. Chernykh (Seismic Station Petropavlovsk) - Earthquake in Kamchatka on the 4 May 1959, M. G. Arabekov (Institute of Geology, Ac. Sc. Azerbaydzhan SSR) - Fold Formations in Apcheronsk Peninsula, Li Shan'-pan (Institute of Geophysics and Meteorology, Chinese Ac. Sc.) - <sup>✓</sup>Seismological Investigations in China, and L. Natsagyun (Committee for Sciences and Higher Schools, Mongolian Republic) - Tectonics of Central Mongolia. Others who took part in the discussions were Corresponding Members of the Ac. Sc. USSR, E. E. Fotiadi and Yu. A. Kosygin,

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SOV/49-59-10-19/19

Session on Seismology and Tectonics of the Pre-Baikal and the Adjacent Regions

The Director of the East Siberian Geological Institute M. M. Odintsov, and the Deputy Director of the Institute of Physics of the Earth, Ac. Sc. USSR, Ye. A. Koridalin. The Session was closed by the Rector of the Irkutsk University, V. Ya. Rogov. ✓

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S/049/60/000/01/027/027  
E201/E191

AUTHOR: Solov'yev, S.L. ✓

TITLE: Seminar on Seismic Zoning of the Carpathian Mountains

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya,  
1960, No 1, p 176

TEXT: The Seminar took place on August 27 to September 1, 1959, at the Institute of Physics of the Earth, Academy of Sciences USSR, Moscow. It was convened by the Council on Seismology, Academy of Sciences USSR. Among the participants were representatives of the Institute of Physics of the Earth, Academy of Sciences USSR, of the Moscow State University, of the Seismology Division, Academy of Sciences Ukr.SSR, and of the Moldavian Branch of Academy of Sciences USSR. Ye.F. Savarenskiy opened the Seminar. The following papers were read: S.V. Medvedev (Institute of Physics of the Earth) discussed the fundamental directions of the work on seismic zoning of the Carpathians and the Balkans; I.V. Batyushkova (Institute of History of Natural Sciences, Academy of Sciences USSR) reviewed the history of investigations of earthquakes in Eastern Europe; Card 1/2 ✓

S/049/60/000/01/027/027  
E201/E191

Seminar on Seismic Zoning of the Carpathian Mountains

S.V. Yevseyev and R.M. Sigalova (Seismology Division, Academy of Sciences Ukr.SSR) presented an earthquake map for Transcarpathia; S.L. Solov'yev (Institute of Physics of the Earth) compared seismicity of Vrancha mountains with the seismicity of various regions in the USSR; I.M. Sukhov (Moldavian Branch, Academy of Sciences USSR) discussed geological history and the present tectonic structure of south-western Ukraine, Moldavia and eastern Rumania; G.P. Gorshkov, G.A. Shenkareva (Moscow State University) and M.V. Gzovskiy (Institute of Physics of the Earth) dealt with seismotectonics of the Pannonskiy Central Massif. The participants resolved to summon the Seminar periodically, and to organize seminars on seismic zoning of other regions.

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S/519/60/000/003/031/031  
D051/D113

Comments of participants in the conference

certain gravitational and magnetic anomalies as exemplified by the Baikal region, quoting the work of A. A. Treskov and V. N. Gayskiy in this field. I. P. Kosminskaya of the Institut fiziki Zemli AN SSSR (Institute of the Physics of the Earth of the AS USSR) dealt with differences in the tectonic-physical conditions of the origin of earthquakes. M. G. Korf (Promstroy-proyekt) emphasized the urgent need for qualitative accelerograms of destructive earthquakes for seismic engineering. Apart from B. A. Petrushevskiy's division of areas of Alpine folding, of reworked and simple platforms, S. A. Zakharov of the Institut geologii AN Tadzhikskoy SSR (Institute of Geology of the AS Tadzhikskaya SSR) proposed to pay special attention to border zones located between areas of different structure. He qualified as badly founded the assertions of N. P. Kostenko, I. V. Kirillova, and A. A. Sorskiy concerning the existence of transversal uplifts with proper zones of increased seismicity. In connection with the reports of S. V. Puchkov and A. Z. Kats, A. N. Safaryan recommended that a more detailed description of physical ground conditions for works of seismic microzoning be made. In connection with the reports of N. A. Vvedenskaya, Yu. V. Riznichenko and I. L. Nersesov, A. Z. Kats, and V. I. Bune and I. L. Nersesov, V. P. Kuznetsov of the Institut geologii im. I. M. Gubkina AN Azerbaydzhanskoy SSR (Institute

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Comments of participants in the conference

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D051/D113

of Geology imeni I. M. Gubkin of the AS Azerbaydzhanskaya SSR) observed that essential data on the relationships between heavy and light earthquakes and also between seismic centers and tectonic disturbances are already available. He also contradicted A. A. Sorskiy's evaluation of the seismicity of the Shemakha rayon. The President of the Council of Seismology Ye. F. Savaren-skiy emphasized the importance of the Tadzhik expedition for the development of new methods of seismic zoning, mentioning the report of Yu. V. Riznichenko and I. L. Nersesov on this subject. G. P. Gorshkov of the Department of Geology of the Moskovskiy universitet (Moscow University) expressed his satisfaction on the increasing number of specialists in seismic zoning and recommended that the various research branches in this field should cooperate more closely. A. G. Nazarov of the Akademiya nauk Armyanskoy SSR (AS Armyan-skaya SSR) showed that observations in seismic engineering are insufficiently developed and proposed to devote one of the future conferences of the Coun-cil to the problem of organizing such observations and supplying the neces-sary equipment. S. A. Frid of the Leningrad branch of Gidroenergoprojekt observed that planning organizations encounter difficulties when using the inadequate planning and construction norms (for seismic areas) issued in

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Comments of participants in the conference

S/519/60/000/003/031/031  
D051/D113

1957, investigated the validity of the Hausner formula for the correlation between intensity  $M$  and the size of the center. V. N. Tabulevich of the Seismicheskaya stantsiya Makhachkala (Makhachkala Seismic Station) put forward her ideas on the seismicity of Makhachkala. In view of the development of construction works, quick accomplishment of microzonation was recommended. V. A. Bykhovskiy of the Tsentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh konstruktsiy Akademii stroitel'stva i arkhitektury SSSR (Central Scientific Research Institute of Structural Parts of the Academy of Construction and Architecture USSR) reported that his figures on the increase in the area of Soviet territory subject to destructive earthquakes and on the population living in this territory differ from those given by S. V. Medvedev. Closing the conference, the vice-president of the Council of Seismology Ye. A. Koridalin stressed the remarkable range of themes dealt with at the conference, and discussed some organizational problems connected with the further development of works in seismic zoning.

Card 5/5

SOLOV'YEV, S. L.

Territorial and statistical characteristics of seismic conditions  
in the Baikal region. Biul. Sov. po seism. no.10:65-72 '60.  
(MIRA 13:11)

1. Sovet po seysmologii AN SSSR, Moskva.  
(Baikal region--Seismology)

SOLOV'YEV, S.L.

Session of the Council of Seismology. Izv.AN SSSR.Ser.geofiz.  
no.10:1510-1511 0 '60. (MIRA 13:9)  
(Seismology)

SOLOV'YEV, S.I.

Preface. Biul. Sov. po seism. no.11:3-5 '60.

(MIRA 14:3)

1. Uchenyy sekretar' Soveta po seysmologii AN SSSR.  
(Kamchatka—Earthquake, 1959)

23457

S/049/61/000/001/002/008  
D226/D306

3,9300(1019,1109,1327)

AUTHOR: Solov'yev, S.L.

TITLE: Some statistical distributions of earthquakes and the  
tectonic structure of seismic zones

PERIODICAL: Akademiya nauk SSSR. Seriya geofizicheskaya. Izvestiya,  
no. 1, 1961, 25 - 32

TEXT: The distribution of earthquakes by area, depth, recurrence  
and magnitude is examined in the four principal tectonic regions  
of the USSR, viz. Pacific, Tethys, Central Asian bloc-faulting  
zone and Verkhayansk - Afatic. A map is provided which is partly  
based on the data of B.A. Petrushevskiy (Ref. 3: O svyazi mezhdu  
zemletryaseniyami maksimal'noy sily i geologicheskoy obstanovkoy.  
Byul. Soveta po seysmologii AN SSSR, No. 8, 1960). The author uses  
the paper as a plea for more fixed stations as well as for more  
seismic expeditions in the USSR, pointing out that the latter de-  
tect large numbers of small earthquakes over a necessarily short

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J

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D226/D306

Some statistical distributions ...

period of time so that it is doubtful whether the data can be used in an investigation of large earthquakes over a long period of time, for which fixed stations are essential. The author is not of the current opinion that crustal shocks occur mainly in the granitic layer in alpine zones and mainly in the basaltic layer in block faulting zones, as has been advanced by Petrushevskiy (Ref. 4: Geologicheskkiye usloviya vozniknoveniya zemletryaseniy. Sov. geologiya No. 2, 1960) and considers that the distribution in depth of shocks is simply different in different places. His data are summarized in Fig. 2. The author applies Gutenberg's formula

$$\lg v = a - bM, \quad (1)$$

where  $v$  - number of earthquakes of magnitude  $M \pm SM$  per unit time per unit area to a number of zones. He shows that in any area of  $S \text{ Km}^2$  the frequency of shocks obeys a Poisson distribution and this enables him to define  $v$  more precisely from his data. The results of his investigation are summarized in a table. On plotting  $\lg v$  against  $M$ , the author concludes that for Alpine - Pacific zones

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Some statistical distributions ...

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D226/D306

(5)

$$M_{\max} \approx 0.9 + 1.5 \bar{a}$$

and for block faulting zones

$$M_{\max} \approx 2.2 + 1.5 \bar{a}$$

(5a)

In both cases, the form of dependence shows that in zones of strong shocks the frequency of weak shocks is high, but in zones of weak shocks it is lower. Also, in block-faulting zones strong shocks correspond to fewer weak ones than in alpine zones, and, conversely, a given recurrence of weak shocks in a block faulting zone presages stronger shocks than in an alpine zone. This is what would be expected on the assumption that the crust is brittle in faulting zones but plastic in folding zones. There are 4 figures, 1 table and 10 references: 7 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: B. Gutenberg, C.E. Richter, Seismicity of the Earth and associated phenomena: Princeton 1954; A.B.M. Schlanger, Some consequences of earthquake statistics for the years 1918 - 1955. Gerl. Beitr. Geophys. B 69, No. 2, 1960; Tsuboiich, A new formula connecting magni-

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Some statistical distributions ...

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D226/D306

tude and number of earthquakes. J. Phys. Earth. 6, no. 2, 1959.

ASSOCIATION: Akademiya nauk SSSR, institute fiziki zemli (Academy of Sciences USSR, Institute of Physics of the Earth)

SUBMITTED: August 20, 1960

Fig. 2. Distribution of seismic shocks in depth within the earth's crust, based on data in the atlas of USSR earthquakes and (Ref. 5: S. V. Puchkov, R. I. Khovanova, Ekspeditsionnyye Seysmicheskiye naablyudeniya v Yugo-zapadnom Pribaykl'ye v 1958-1959 gg. Byul. Sove- ta po seysmologii AN SSSR, No. 10, 1960 - Seismological Expedition to Southwest Baikal 1958-1959).

Legend: 1 - Alpine zones; 2 - block zones; a - krym, 1927-1957; 6 - Dzhavakhetskoye highlands in the Little Caucasus, 1950; 0 - south-east border of Great Caucasus, 1951-1953; 2 - Caspian region of southwest Turkmanistan, 1951 - 1952; 0 - Pleistocene district of Ashkhabadskiy earthquake, 5th October 1948, 1949; e - ditto 1953;

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S/049/61/000/001/005/008  
D226/D306

AUTHOR: Solov'yev, S.L.

TOPIC: Meeting of the European seismologic commission

PERIODICAL: Akademiya nauk SSSR. Seriya geofizicheskaya. Izvestiya,  
no. 1, 1961, 120

TEXT: The author describes a meeting of the European Seismologic Commission (E.S.C.) at Helsinki in which 10 representatives from the USSR participated. One of the main features of the program was a paper by V. Karnik (Czechoslovakia) on the compilation of seismic maps of Europe. The author mentioned that he had continued the work of M. Bota [Abstractor's note: Name transliterated from Russian] (Sweden) and had compiled on the basis of national catalogs a preliminary composite list of European earthquakes from 1901 to 1955 with a force of 6 and more, i.e. with an approximate magnitude of  $M \geq 4.75$ . Five maps were also prepared: European earthquakes of force 6, 7, 8 and 9 and more with foci within the

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Meeting of the European ...

S/049/61/000/001/005/008  
D226/D306

crust, and earthquakes at depths of beyond 60 km with a magnitude of 4.5 and more. Karnik stated that a supplemented and more uniform scheme of cataloging, particularly as regards methods of determining the force, magnitude and focal depth of earthquakes, and also the appraisal of the precision of determination of epicenters are required for the preparation of a finalized seismic map of Europe. B.B. Belousov and V. Karnik were asked to prepare a seismotectonic plan of Europe for the next meeting of the commission. The next meeting of the E.S.C. will be in Jena in September, 1962.

Card 2/2

S/049/61/000/001/006/008  
D226/D306

AUTHORS: Popov, I.I., and Solov'yev, S.L.

TITLE: Conference on the seismic zoning of the Crimea

PERIODICAL: Akademiya nauk SSSR. Seriya geofizicheskaya. Izvestiya,  
no. 1, 1961, 120 - 121

TEXT: A conference on Crimean seismology and seismic zoning took place at Simferopol' on October 6 - 8, 1960, the participants being the Seysmicheskii soviet AN SSSR (Seismologic Council of the AS USSR), the "Simferopol'" Tsentral'naya seysmicheskaya stantsiya instituta fiziki zemli AN SSSR (Central Seismic Station of the Institute of Physics of the Earth, AS USSR), and the Crimean Branch of the Nauchno-tekhnicheskoye obshchestvo stroyindustrii (Scientific-Technical Society of the Building Industry). The aim of the conference was: 1) To attract the attention of both local and other experts to the study of Crimean earthquakes; 2) To remind builders of the need for providing for earthquakeproof buildings in hajar-

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dous seismic zones; 3) To familiarize the participants from various institutions with work being carried out on the theme of the conference. It was opened by S.V. Sosnitskiy, the assistant chairman of the Crimean Regional Executive Committee, and E.F. Savarenskiy, chairman of the Seismologic Council AS USSR. Seismologic papers were heard on the first day. I.I. Ponov ("Simferopol'" Seismic Station) spoke of the history and present state of the study of Crimean earthquakes and gave some basic facts about earthquakes. S.V. Medvedev (Institute of Physics of the Earth AS USSR) outlined the chief aims of further work on making a more accurate scheme for the seismic zoning of the peninsula. O.I. Yurkevich (Seismic Department AS UkrSSR) spoke on the seismic zoning of Trans-Carpathia -- the second seismic region of the Ukraine, in particular on the use of multiple-leveling data in seismic zoning. A map of earthquake epicenters in the Black Sea basin was presented by A.Ya. Levitska (Institute of Physics of the Earth, AS USSR). Z.I. Aronovich ("Simferopol'" Seismic Station) reported in detail on the energetics of Crimean earthquakes. The second day of the conferen-

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ce was devoted to building problems. Papers were heard by V.P. Umants ("Simferopol" Branch of 'Giprograd'), O.Z. Ioffe of Trest "Yaltastroy" (Yalta Building Trust) and V.N. Timofeyev (Yalta Branch of 'Giprograd') on the state of planning and construction of buildings for seismic areas of the Crimea as was the information of B.K. Karapetyan on the work of the Armyanskiy institut stroymaterialov i sooruzheniy (Armenian Institute of Building Materials and Construction) on problems of earthquakeproof construction and engineering seismology. Papers by G.A. Lychagin, Krymskaya geologicheskaya kompleksnaya ekspeditsiya (Crimean Geological Expedition Group) on geology of the Crimean Peninsula and M.V. Muratov, Moskovskiy geologorazvedochnyy institut (Moscow Geological Prospecting Institute) on Crimean neotectonics, and also reports by V.B. Sollogub (Geologic Institute, AS UkrSSR) on the study of crustal structure in southern areas of the Ukraine and A.A. Shimkus, Black Sea Station of the Institut okeanologii AN SSSR (Oceanologic Institute, AS USSR) on the study of crustal structure in the Black Sea basin, were heard on the last day. The conference adopted a

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resolution which particularly mentioned the need for the micro-seismic zoning of the south Crimean coast and stipulated a number of measures aimed at guaranteeing the earthquakeproof construction of buildings in the Crimea.

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S/030/61/000/002/009/011  
B105/B206

AUTHOR: Solov'yev, S.L.

TITLE: Division of the Crimea into seismic regions

PERIODICAL: Vestnik Akademii nauk SSSR, no. 2, 1961, 110 - 111

TEXT: This article deals with problems of the division into seismic regions and with earthquakeproof building activities in the Crimea. A Conference is mentioned which was convened by the Sovet po seysmologii (Seismological Council), the seysmicheskaya stantsiya "Simferopol'" (Seismic Station "Simferopol'") of the Institut fiziki Zemli im. O.Yu. Shmidta Akademii nauk SSSR (Institute of Physics of the Earth imeni O.Yu. Shmidt of the Academy of Sciences USSR) and the Krymskoye otdeleniye (Crimean Department) of the Nauchnotekhnicheskoye obshchestvo stroitel'noy industrii (Scientific and Technical Society of the Building Industry), and held from October 6 to 10, 1960. The Conference was attended by experts from Moscow, Kiyev, L'vov, Yerevan, Baku, the towns of the Crimea as well as delegates from building- and design organizations of the Krymskaya oblast' (Crimean oblast'). The following reports are mentioned: I.I. Po-

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nov, Chief of the "Simferopol'" Station, reported on the history of seismology in the Crimea, results achieved and the trend of further studies; A.Ya. Levitskaya produced a total diagram of the epicenters of earthquakes in the Black Sea and its coastal regions; Z.I. Aranovich, Collaborator of the Station, reported on the evaluation of the presumable frequency of earthquakes of various strength in the Crimea; S.V. Medvedev, on problems of the seismic microdivision of the Crimea into several regions; S.V. Yevseyev and O.I. Yurkevich, on studies in the field of the seismic division into regions of the Transcarpathian Mountains; M.V. Muratov, G.A. Lychagin, V.B. Sollogub and others reported on problems of seismology and structure of the earth's crust in the Crimea and Black Sea. The delegates to the Conference visited seismic stations and building sites in Sevastopol' and Yalta. V.P. Umanets, O.Z. Ioffe, and A.A. Timofeyev reported on experiences in design and construction of buildings and installations in the seismic area of the Crimea. The applicability of Crimean sand stone, which can be sawed, for constructions in seismically active areas was discussed. As a result of the exchange of views, recommendations were made for the design and construction of cheap and earthquake-proof buildings in the Crimea. It was found necessary to con-

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sider special conditions for buildings in the southern and southeastern coastal regions from Sevastopol' to Feodosiya. The quality of buildings made from large blocks must be improved. In the resolution of the Conference the necessity was pointed out of dividing the Crimea into microregions in the zone of 8 degree seismism. The activity of the various institutes investigating the structure of the earth's crust in the Crimea by means of geophysical methods should also be better coordinated.



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SOLOV'YEV, S.L.; FENCHEV, M.D.

A summary of data on tsunamis in the U.S.S.R. Biul. Sov. po seism.  
no.9:23-55 '61. (MIRA 14:4)

(Tidal waves)

SOIOV'YEV, S.L.

Session of the Council for Seismology of the Academy of Sciences of  
the U.S.S.R. devoted to the establishment of seismic microregions.  
Izv. AN SSSR, Ser. geofiz. no.9:1394-1395 S '61. (MIRA 14:9)  
(Seismology)

W, S.

Deter. ... seismic districts of the Cr. ... 21  
no. ... 110-111 F 1. (11. 14: )  
(Cr. ... Earthquakes)

Z/023/62/000/001/002/004  
D006/D102

AUTHORS: Kárník, V., Kondorskaya, N. V., Riznichenko, Yu.V., Savarensky, E.F.,  
Solovyev, S.L., Shebalin, N. V., Vaněk, J., and Zátpek, A.

TITLE: Standardization of the earthquake magnitude scale

PERIODICAL: Studia geophysica et geodaetica, no. 1, 1962, 41-47

TEXT: The paper presents a proposal for standard methods of magnitude determination of both shallow and deep earthquakes, and describes the practical application of the suggested magnitude scale as agreed upon by Soviet and Czechoslovak seismologists at meetings held in Prague on December 7-14, 1960 and in early 1961. The proposal is based on the following postulates: (1) General acceptance of a unified formula for the definition of the earthquake magnitude M

$$M = \log (A/T)_{\max} + \sigma(\Delta) \quad (1)$$

where A is the maximum ground amplitude of the wave considered (in microns), T is the corresponding period in seconds, and  $\sigma(\Delta)$  is the calibrating function expressing the relation between  $A/T$  and the epicentral distance  $\Delta$ , which is

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different for different wave types; (2) General application of standard calibrating functions  $\epsilon(\Delta)$  for body and surface waves as calculated according to the methods recommended by the proponents; (3) Determination of a representative M for each earthquake, to be represented by a simple arithmetic mean of magnitudes of a single wave type as established according to the proposed standard method at many stations. The determination should be done by a proposed international center. As of January 1, 1962, the magnitude M will be determined according to the proposed standard method at all Czechoslovak and Soviet seismological stations. J. Vaněk and J. Stelzner are the personalities mentioned. There are 2 tables and 20 references: 8 Soviet-bloc and 12 non-Soviet-bloc. The references to the four most recent English-language publications read as follows: J. Vaněk, J. Stelzner, The problem of magnitude calibrating functions for body waves, *Annali di Geofisica*, 13, 1960, 39; E. Bisztricsány, On the determination of earthquake magnitudes, *Annales Univers. Sci., Budapest, Sect. Geolog.*, 2, 1959, 39; T. Nagamune, A. Seki, Determination of earthquake magnitude from surface waves for Matsushiro seismological observatory and the relation between magnitude and energy. *Geophys. Mag.*, 28, (1958), 303; Z. Droste, S. Gibowicz, Determination of the magnitude of distant earthquakes at the Silesian geophysical station in Raciborz. *Acta geophys. polon.*

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Standardization of the ....

Z/023/62/000/001/002/004  
D006/D102

6, (1958), 222. (Technical editor: L. Ruprechtová)

ASSOCIATION: Geophysical Institute, Czechoslovak Academy of Sciences, Prague  
(V. Kárník, J. Vaněk); Institute of the Physics of the Earth, Academy  
of Sciences of the USSR, Moscow (N.V. Kondorskaya, Yu. V. Riznichenko,  
E. F. Savarensky, S. L. Solovyev, N. V. Shebalin); Institute of Geo-  
physics, Charles University, Prague (A. Zatopek)

SUBMITTED: November 11, 1961

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S/049/62/000/002/001/005  
D21C/D301

**AUTHORS:** Vaněk, J., Zátpek, A., Kárník, V., Kondorchikova, N.V.,  
Riznichenko, Yu.V., Savarenskiy, Ye.S., Solov'yev,  
S.L. and Shebalin, N.V.

**TITLE:** Standardization of the magnitude scale

**PERIODICAL:** Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya, no. 2, 1962, 153-158

**TEXT:** It is pointed out that various magnitude scales are used at the present time and that their main disadvantage is that they provide different magnitudes for a given earthquake. This is because in many cases the methods used to calculate the magnitude are not clearly defined and are inadequately described. A special conference of Soviet and Czechoslovak seismologists was convened in Prague on December 7-14, 1960, to deal with this problem. The aim of the present paper is to give an account of the main results of the Prague meeting and to suggest a standard method for determining

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Standardization of the magnitude scale S/049/62/000/002/001/005  
D213/D301

the earthquake magnitude. It is suggested that the scale should be based on the following standard formula:

$$M = \lg \left( \frac{A}{T} \right)_{\max} + \sigma(\Delta)$$

where  $A$  is the maximum displacement amplitude,  $T$  is the corresponding period in seconds and  $\sigma(\Delta)$  is a calibrating function which describes the variation of  $A/T$  with epicentric distance and is different for different types of waves. This formula has been discussed by J. Guterberg and C.F. Richter, and by the first three of the present authors in an earlier work. The calibration function is taken as an average of the  $Q$  function of Guterberg and Richter and the  $\beta$  function of J. Vaněk and J. Stelzner. A table is reproduced giving the smoothed average calibrating functions for  $M_H$ ,  $M_V$ ,  $M_H$ , and  $M_H$  waves. In the case of surface waves, the calibrating function is taken to be of the form  $\sigma(\Delta) = a \lg \Delta + b$ . It was found that the coefficients  $a$  and  $b$  for  $M_H$  waves are on average equal to 1.66 and 3.3 respectively. This result holds for surface waves at epi-

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Standardization of the magnitude scale S/049/62/000/002/001/005  
D218/J301

ASSOCIATION: Geofizicheskiy institut Akademii nauk Ch SSR (Geophysics Institute of the Academy of Sciences, Czechoslovak SSR), Geofizicheskiy institut Karlova Universiteta, Praga (Geophysics Institute, Charles University, Prague) and Akademiya nauk SSR, Institut fiziki zemli (Academy of Sciences USSR, Institute of Physics of the Earth) ✓

SUBMITTED: October 31, 1961

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S/166/62/000/003/001/010  
B142/B101

AUTHORS: Mirzayev, V., Solov'yev, S. L.

TITLE: Relation between the intensity of earthquakes and the dynamic parameters of seismic waves (according to data obtained with LMF-2 (SMR-2) devices)

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 3, 1962, 11 - 17

TEXT: Quantitative determination of earthquake intensity in terms of physical data is sought by examining the relations between the seismic energy flux, the maximum velocity and maximum acceleration of ground motion, associated with study of SMR-2 recordings. Data recorded between 1949 and 1960 at the "Tashkent", "Andizhan", and "Fergana" stations were used. The current density  $\epsilon$  of seismic energy is obtained from

$\epsilon = 4\pi^2 \rho c (a/T)^2 \Delta t$ , where  $\rho c$  is the specific acoustic impedance of the medium at the station,  $a$  is the amplitude,  $T$  is the period, and  $\Delta t$  is the period of the harmonic oscillation. All data obtained for an earthquake were used in the calculation. Besides  $\epsilon$ , the values of  $A$  (maximum  
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SOLOV'YEV, S.L.; SOLOV'YEVA, O.N.

Exponential distribution of the total number of earthquake  
aftershocks and the decrease of its mean value with depth.  
Izv.AN SSSR. Ser.geofiz. no.12:1685-1694 '62. (MIRA 16:2)

1. Sakhalinskiy kompleksnyy nauchno-issledovatel'skiy  
institut, Sibirskoye otdeleniye AN SSSR.  
(Earthquakes)

KARNIK, V.; KONDORSKAYA, N.V.; RIZNITCHENKO, Ju. V.; SAVARENSKY, E.F.;  
SOLOVIEV, S.L.; SHEBALIN, N.V.; VANEK, J.; ZATOPEK, A.

Standardization of the magnitude scale of earthquakes. *Studia  
geophys* 6 no.1:41-48 '62.

1. Geophysical Institute, Czechoslovak Academy of Sciences,  
Praha 4, Bocni II (for Karnik, Vanek). 2. Institute of Physics  
of the Earth, Academy of Sciences of USSR, Moskva G-2/2, B.  
Gruzinskaja 10 (for Kondorskaya, Rznitchenko, Savarensky, Soloviev,  
Shebalin). 3. Institute of Geophysics, Charles University, Praha 2,  
Ke Karlovu 3 (for Zatopek).

SOLOV'YEV, S.L., kand.fiz.-matem.nauk (Moskva)

Catastrophic sea wave in Alaska. Priroda 51 no.3:72-74 M  
'62. (MIRA 15:3)

(Alaska—Earthquakes)



SOLOV'YEV, S. L.; VARCHENKO, A. I.; AVER'YANOVA, V. N.

Some Investigations of Seismic Conditions of Tsunami Generation and Improvement  
of Equipment of Tsunami Warning System.

Report submitted for the 13th General Assembly, IUGG (Oceanography) Berkeley,  
California, 17-31 Aug 63.

SOLOV'YEV, S.L.

Connection of Scandinavian earthquakes with negative relief  
forms. Izv. AN SSSR. Ser. geog. no.6:112-115 N-D '63.  
(MIRA 17:1)

1. Sakhalinskiy kompleksnyy nauchno-issledovatel'skiy  
institut Sibirskogo otdeleniya AN SSSR.

SOLOV'YEV, S.L.

Seismology in Sweden. Izv. AN SSSR. Ser. geofiz. no.7:

1914-1020 J1 '63.

(MIRA 16:8)

1. Sibirskoye otdeleniye AN SSSR, Sakhalinskiy kompleksnyy nauchno-issledovatel'skiy institut. Predstavleno chlenom redaktsionnoy kollegii Izvestiy AN SSSR, Seriya geofizicheskaya, Ye.F. Savarenskim.

(Sweden—Seismology)

SOLOV'YEV, S.L.

Visiting with Swedish geophysicists. Geofiz. biul. no.13:74-79 '63.  
(MIRA 17:2)

SOLOV'YEV, S.I.

Seminar for supervisors of seismic stations in the Far East.  
Geol. i geofiz. no.2:163-164 '64.

(MIRA 18:4)

SOLOV'YEV, S. L.; SOLOV'YEVA, O. N.

Comparison of the amplitude fields of body waves engendered in Kurile-Kamchatka and Mediterranean earthquakes. Izv. AN SSSR. Ser. geofiz. no. 4:483-493 Ap '64. (MIRA 17:5)

1. Sibirskoye otdeleniye AN SSSR i Sakhalinskiy kompleknyy nauchno-issledovatel'skiy institut.

L 14344-65 EWT(1)/EWA(h) Feb SSD/AFNL/AFETR/ESD(t) GW  
ACCESSION NR: AP4041179 S/0049/64/000/006/0839/0846

AUTHORS: Solov'yev, S. L.; Pustovitenko, A. N.

TITLE: Possible reduction of the period of longitudinal waves from  
deep focus earthquakes ✓

SOURCE: AN SSSR. Izv. Seriya geofizicheskaya, no. 6, 1964, 839-846

TOPIC TAGS: seismic wave, earthquake

ABSTRACT: In view of the lack of detailed investigations of the spectra of the direct P and S volume waves from earthquakes, an attempt was made to determine and compare the spectra of the P waves from earthquakes having different energies and different focal depths. The material employed were the seismic station data of the Kuriles-Kamchatka earthquakes from 1952 through 1962. The analysis was limited to the abscissa of the maximum of the spectrum. To increase the range of earthquakes covered, data obtained with two

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ACCESSION NR: AP4041179

types of seismographs (SVK and VEGIK) were used. The spectra were calculated by the approximate method of F. M. Gol'tsman and A. P. Volin (Vestn. LGU, no. 16, 1956) (sb. Voprosy\* dinamicheskoy teorii rasprostraneniya seysmicheskikh voln, no. 2, L., 1959). It is concluded that the period of the P wave has a tendency to decrease with increasing depth of the earthquake, but more definite deductions must await the accumulation of more experimental data. Orig. art. has: 4 figures.

ASSOCIATION: Akademiya nauk SSSR, Sakhalinskiy kompleksnyy nauchno-issledovatel'skiy Institut (Academy of Sciences SSSR, Sakhalin Scientific Research Institute for Comprehensive Studies)

SUBMITTED: 22Jun63

ENCL: 00

SUB CODE: ES

NR REF SOV: 004

OTHER: 003

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SOLOV'YEV, Sergey Leonidovich, kandi. fiz.-matem. nauk; ABRAMOV,  
A.L., red.

[Earthquakes and tsunamis on October 13 and 20, 1963 in  
the Kurile Islands] Zemletreseniia i tsunami 13 i 20  
oktiabria 1963 goda na Kuril'skikh ostrovakh. Iuzhno-  
Sakhalinsk, [Iuzhno-Sakhalinsk] 1965. 100 p.  
(MIRA 18:10)

1. Zaveduyushchiy otdelom seysmologii Sakhalinskogo kom-  
pleksnogo nauchno-issledovatel'skogo instituta Sibirskogo  
otdeleniya AN SSSR (for Solov'yev).

SOLOV'YEV, S.H.

Let us perform established tasks ahead of schedule. Apt. delo 10  
no.4:53-54 J1-Ag '61. (MIRA 14:12)

1. Novosibirskoye oblastnoye aptechnoye upravleniye.  
(NOVOSIBIRSK PROVINCE—DRUGSTORES)

RUSSIAN, S.M.

Ways of developing a network of drugstores in Novosibirsk  
Province. Apt. delo 13 no.4:67-69 J1-Ag '64. (MIRA 18:3)

1. Novosibirskoye oblastnoye aptekoupravleniye.